is a creative judgment involved here which will be controversial. But, in our view, this is a core issue which should be dealt with up front. It impacts many entities -- including the all-important HDTV camera person and the associated program director, who, together, must learn new shooting techniques which encompass the more dramatic wide angle ATV shots while also anticipating a "center-cut" picture content which still portrays the essence of a sensible NTSC picture. Further creative judgments may be required in post-production.

Although in one sense it can be argued that such a dual shooting technique imposes undue hardships on the broadcast program originator, and also disenfranchises the NTSC-only viewer with a "lesser" picture -- Sony submits that a sharp distinction between the aesthetic, dramatic and structural native of ATV imagery and that of NTSC **is crucial to the success of any ATV service**. We totally disagree with the view of some "that ATV is all about widescreen (only)." Nothing, in our view, could so miss the whole point of the visual impact promised by ATV than such a restrictive assessment. We have had an extensive global experience for a decade in creating and displaying HDTV images of all sorts. Clearly, the emotional impact has always been dramatically evident when viewers were looking at large screens -- with wide-angle vistas. They were generally stunned by this entirely new visual presentation -- one they instinctively were only too aware was simply not possible with NTSC.

We strongly recommend that the Commission do all in its power to encourage U.S. broadcasters to enthusiastically embrace ATV and seek to exploit it to the full in the pursuit of a totally new television viewing experience. The philosophy of the unique new program making **must assertively assume that the downconverted simulcast NTSC program will be of a distinctly lesser visual content** -- although still a totally valid NTSC representation from the viewpoint of "story" content and of course, presenting an adequate imagery and resolution compatible with the normal NTSC portrayal.

B. Protection of Consumer Investment in NTSC

The Commission has expressed the view that the further advanced ATV penetration becomes, and the more the associated ATV programming volume expands, the greater will be the need to impose regulatory requirements to protect consumer investment in existing NTSC. We believe this to be true primarily in the case of the small screen TV marketplace (which as explained below can only be fed over-the-air). With respect to other types of NTSC equipment, we believe that market forces will operate to protect that investment.

Sony is convinced that the same dazzling technology of digital data rate reduction that has opened up the new all-digital ATV broadcasting era will also propel digital multi-channel NTSC services via the alternative media of cable, fiber,

microwave, DBS. It is inevitable in our view that the U.S. consumer's thirst for programming and an increasing desire for convenient random access of a wide choice of programming will be well addressed by such new services. This dynamic, as we stated earlier, we fully expect to parallel the growth of ATV. But the new multichannel services also ensure a vigorous perpetuation of the NTSC system, regardless of what might happen with terrestrial NTSC broadcasting, thus reducing the need for a rigid simulcasting requirement to protect the established investment in NTSC equipment. As we stated above, the ATV service will have to offer a distinctly different viewing experience to persuade the U.S. consumer to pursue both services.

Having discussed this extensively within Sony, we have concluded that multichannel NTSC service is inevitable and will serve a sizeable proportion of U.S. consumers. NTSC will continue to thrive via cable and DBS delivery. Thus, consumers who will ponder the wisdom of investing in a relatively cost-effective new NTSC receiver (in contrast to the more expensive ATV alternative) will be encouraged by:

- Continuing NTSC transmissions (on cable and DBS) indefinitely as far as they are concerned and

- Option to buy (at any time in the future) the ATV downconverter (if it can be made viable) to extend the NTSC option.

Thus, for some years the consumer will benefit from an augmented NTSC service (compared to that today). But there is also an important built-in marketing dynamic in the above scenario. As ATV penetration rises, more and more consumers will become aware that they are "missing" something. Right in their own living room -- via the downconverted NTSC (from the ATV simulcast channel) -- will be a continuing "reminder" of an inferior program presentation that could be so much dramatically better. Regularly seeing it in dealer showrooms, public venues, and neighbor's houses -- on true ATV screens -- will act very much like the similar psychological impetus that slowly, but with gathering speed, converted the U.S. consumers from black and white to color throughout the 1960's.

C. Dual Mode ATV Receivers

In reply to the Commission's comment in **Paragraph 59** that a simulcast requirement will give added impetus to ATV receiver penetration by eliminating the need for dual mode receivers capable of receiving both NTSC and ATV -- we have come to a different conclusion. As stated earlier, we believe NTSC services will be newly stimulated by the advent of multichannel NTSC delivered by media other than over the air broadcasting. This is likely to last long into the ATV era -- at least until ATV receivers approach those of NTSC in pricing and future digital technologies allow cost-effective multichannel ATV services. Thus, we conclude that ATV receivers, for the

foreseeable future (certainly well into the first decade of the next century) will be obliged, from a marketplace imperative, to include NTSC receiving capability. Indeed, depending upon how future digital technologies and manufacturing techniques develop, its not inconceivable to think of future ATV receivers which will have their multichannel digital NTSC encoders incorporated within the ATV decoding subsystem -- and all built-in.

We draw attention to the fact that, in Japan, virtually all currently sold HIVISION receivers from multiple manufacturers incorporate NTSC (indeed including quite sophisticated NTSC facilities like picture in picture, multiple NTSC display, electronic zoom etc.) reception capabilities. While a quite different marketplace to our own, the Japanese experience does set a precedent which cannot be ignored. The first U.S. ATV receivers will surely have full NTSC facilities built-in - and the likelihood of this remaining so for many years is very high.

IV. CONVERSION TO ATV

A. Timetable for Conversion

Sony Corporation fully understands the Commission's desire to define a nationwide termination date for over-the-air transmission of NTSC. Further Notice, ¶ 53. We acknowledge the critical dilemma of spectrum utilization as a major public policy issue affecting many sectors of U.S. society.

Nevertheless, we urge the Commission to exercise caution in setting a specific NTSC termination date -- **at this time**. There are simply far too many factors that will impact upon the speed with which broadcasters and consumers convert to full ATV service. Among them are the following:

- Initial costs of ATV receivers?

- U.S. consumer reaction to ATV?
  Note: no available useful audience research to date

- How quickly U.S. consumers will adopt ATV?

- Availability of a "critical mass" of HDTV programming to sustain a strong ATV penetration?

- Extent of local station conversion to HDTV origination of local programming?

- What combination of delivery media will become involved in the delivery of ATV programming in the early years?

- How acceptable will be set-top downconverters?

B. ATV and Competing New NTSC Services

Consumer interest in and acceptance of ATV will be a function not only of the availability of ATV programming and affordable ATV receivers but of consumer interest in and willingness to purchase such equipment versus NTSC receivers. It now appears to be very likely that cable and DBS operators will be vigorously promoting new **Multichannel NTSC** services at the same time as ATV service is inaugurated in the United States. Both services will thus vie for consumer attention and dollars. In our judgment, programming availability -- for both -- will become a crucial factor affecting their relative market penetrations. In any event, the success of multichannel NTSC services will considerably increase the likelihood that new NTSC receivers will continue to be sold and used in the huge U.S. marketplace for the foreseeable future.

Nonetheless, a premature public announcement of the termination of over-the-air NTSC broadcasting will surely cause widespread consumer confusion and adversely impact upon **current** NTSC receiver business. For these reasons we strongly urge that the Commission adopt a flexible position with regard to a definitive termination date for NTSC terrestrial broadcasting.

It is our recent observation that U.S. consumers (and dealers) are already exhibiting signs of confusion with respect to continuation of NTSC service. They both read a great deal

about HDTV/ATV in the press today. Apprehension in the dealer showrooms is already apparent. Today, questions abound as consumers weigh a potential purchase of a new NTSC receiver -- naive, but disturbing, questions regarding Widescreen NTSC, ATV, traditional NTSC obsolescence etc.

Thus, the public announcement of even a tentative date could cause a serious marketplace disruption -- today. We have all learned, in the past, the penalties associated with confusing the consumer. More than 20 million color NTSC television sets, 10 Million VCR's and 3 Million camcorders are sold annually in the U.S. This massive activity speaks to the livelihoods of tens of thousands of employees of retailers, distributors, and manufacturers.

Accordingly, we urge particular care in addressing this major topic of a shutdown date for NTSC terrestrial transmission. Nobody can predict (with any certainty) how ATV will actually unfold in the U.S. consumer marketplace. Conjecture predominates over desirable marketplace data. We each owe it to ourselves, to our industry, and to public policy at large, to closely monitor the marketplace dynamics from 1993 through the remainder of the decade. The legendary "one percent" marketplace penetration (for ATV) is as good a milestone in time as any on which to anchor any major pronouncement for the future of NTSC terrestrial transmission. The time it takes to achieve one percent ATV

penetration will teach a great deal about the consumer reaction to ATV.

C. A Critical NTSC Receiver Market - the Portable TV Set

There exists in the U.S. today a large NTSC market segment that is sometimes forgotten. This is the "portable" television market - consisting of lower priced small screen (13" and under) television receivers. These sets are truly ubiquitous. They are used in kitchens, bathrooms, vacation homes (which, incidentally, are often not cabled or ever likely to be so), RV's, cars, boats, and even handheld sets used by commuters.

It is our estimation that of the more than 20 million color receivers sold annually in the U.S. some 4 million are of this general portable category (that is a very substantial 20% of the market). **These sets are unique in that they can only be served by terrestrial broadcasting.**

All of the benefits of ATV diminish rapidly when screen sizes become small. At 13" and less the attributes of ATV are almost lost -- even the widescreen now becomes questionable. Because of this shortcoming these portable television sets will be the last to be addressed by receiver manufacturers. In one sense, therefore, the provision of small ATV sets becomes the critical path in the overall schedule that determines an appropriate date for the termination of over-the-air NTSC

service. Premature termination of these transmissions would disenfranchise many consumers and destroy a sizeable thriving small screen market. Nor will an NTSC downconverter provide a sensible solution to this issue (as should be obvious from our earlier discussion on this topic).

Our own internal analysis of a possible future small screen ATV market unfortunately yielded little by way of believable predictions on any likely time frame, or costs. We simply have no idea at this time because of the larger unknown of the primary ATV marketplace dynamics.

D. A Proposal for an Alternative Timetable for NTSC Termination

While the proposal of a 15 years termination date, with a critical review of this choice in 1998, appears to be a sensible approach -- it is flawed by the present totally unknown ATV marketplace status in that year. 1998 is a mere 2-3 years after the first expected ATV services begin (probably in isolated markets). At that point, it is unlikely that there will be much substantive information on which to predict what might ensue over the next much more critical 5-10 years.

Thus, as an alternative, we recommend that the Commission not make any public announcement at this time of a plan to definitively terminate NTSC; but that instead, a tentative date be announced later -- in that year in which ATV

achieves **one percent** market penetration in the U.S.; and that this termination date be reviewed again in that year when a **10 percent** ATV marketplace penetration is reached, with a view to then finally confirming that NTSC termination date.

We believe this two step-process will afford the critical marketplace insights that are needed to ensure implementation of an NTSC phaseout plan that makes sense and avoids possible downstream embarrassment. The proposed second step, in our view, is the most important -- because the time it takes to climb from one percent to ten percent market penetration will clearly identify the rate of "take-off" of ATV and thus allow a more sensible and accurate prediction of an appropriate NTSC termination date.

CONCLUSION

Sony Corporation of America is enthusiastic about the current vigorous industry activity, well supported by a dynamic Commission, that is directed toward provision of an ATV broadcasting service in the U.S. Our own enthusiasm for all that HDTV will offer society is well known.

We believe the challenges yet remaining will be systematically overcome by active cooperation between broadcasters and manufacturers. We especially believe that the U.S. move to all-digital ATV has paved the way to the harnessing

of the most powerful and cost-effective of all modern technologies -- the digital large scale integrated chip -- to address the key challenge of lowering equipment costs for both broadcasters and consumers.

We strongly believe that standards should reflect pragmatism, the current needs of industry, and the pathway to future evolution; they should never confuse or impede marketplace progress. If we have dwelt on this topic in our comments, we beg the indulgence of the Commission and plead only our earnest belief that unity behind a single standard has never been so crucial as in the HDTV era. The breadth of the U.S. HDTV standards development efforts -- and their long 10 year history -- should not cloud the fine achievements that have actually been completed. These achievements now await only sensible and speedy implementation.

Respectfully submitted,

SONY CORPORATION OF AMERICA

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July 17, 1992

CERTIFICATE OF SERVICE

I, Paula Allen, certify that I have this 17th day of July, 1992, sent by hand-delivery, a copy of the foregoing Comments of Sony Corporation of America to:

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